

DEVICES FOR LESS-INVASIVE INTRACARDIAC INTERVENTIONS

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ABSTRACT OF THE DISCLOSURE

Devices, systems, and methods are provided for accessing the interior of the heart and performing procedures therein while the heart is beating. In one embodiment, a tubular access device having an inner lumen is provided for positioning through a penetration in a muscular wall of the heart, the access device having a means for sealing within the penetration to inhibit leakage of blood through the penetration. The sealing means may comprise a balloon or flange on the access device, or a suture placed in the heart wall to gather the heart tissue against the access device. An obturator is removably positionable in the inner lumen of the access device, the obturator having a cutting means at its distal end for penetrating the muscular wall of the heart. The access device is preferably positioned through an intercostal space and through the muscular wall of the heart. Elongated instruments may be introduced through the tubular access device into an interior chamber of the heart to perform procedures such as septal defect repair and electrophysiological mapping and ablation. A method of septal defect repair includes positioning a tubular access device percutaneously through an intercostal space and through a penetration in a muscular wall of the heart, passing one or more instruments through an inner lumen of the tubular access device into an interior chamber of the heart, and using the instruments to close the septal defect. Devices and methods for closing the septal defect with either sutures or with patch-type devices are disclosed.

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